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Water Supply Outlook For Washington



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
MAY 1, 1979

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: VIEW OF A SNOTEL DATA SITE IN THE SNOWY RANGE IN WYOMING. TALL CYLINDRICAL DEVICE IS A PRECIPITATION GAGE. SNOW PILLOWS ON THE GROUND NOT VISIBLE DUE TO SNOW COVER. SHELTER HOUSE, ANTENNA TOWER, ANTENNA, AND TEMPERATURE UNIT ARE VISIBLE BEHIND THE PRECIPITATION GAGE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ADMINISTRATOR
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WASHINGTON D C

Released by

GALEN S. BRIDGE
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

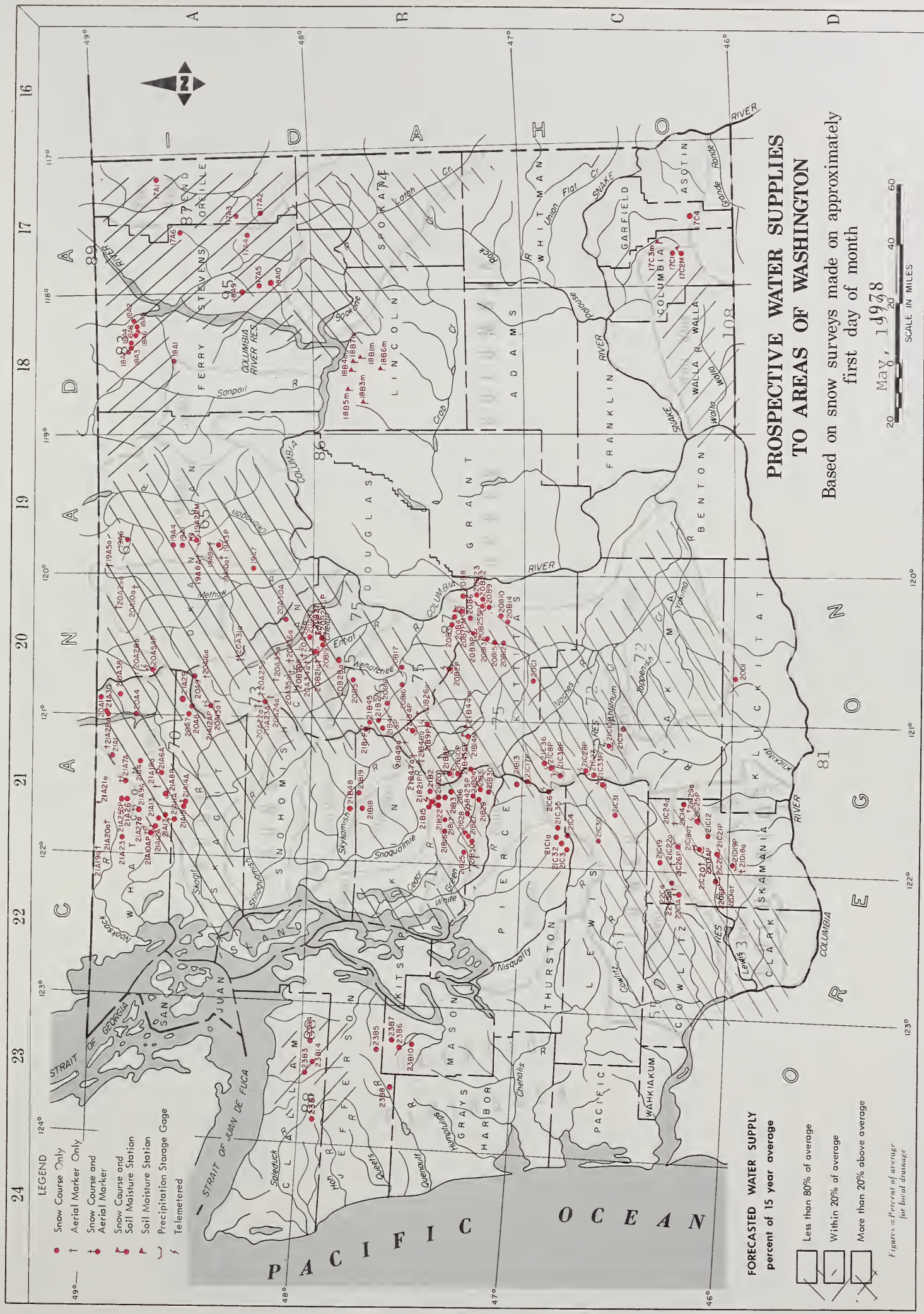
WILBUR G HALLAUER
DIRECTOR
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STATE OF WASHINGTON

Report prepared by

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SOIL CONSERVATION SERVICE
360 U S COURTHOUSE
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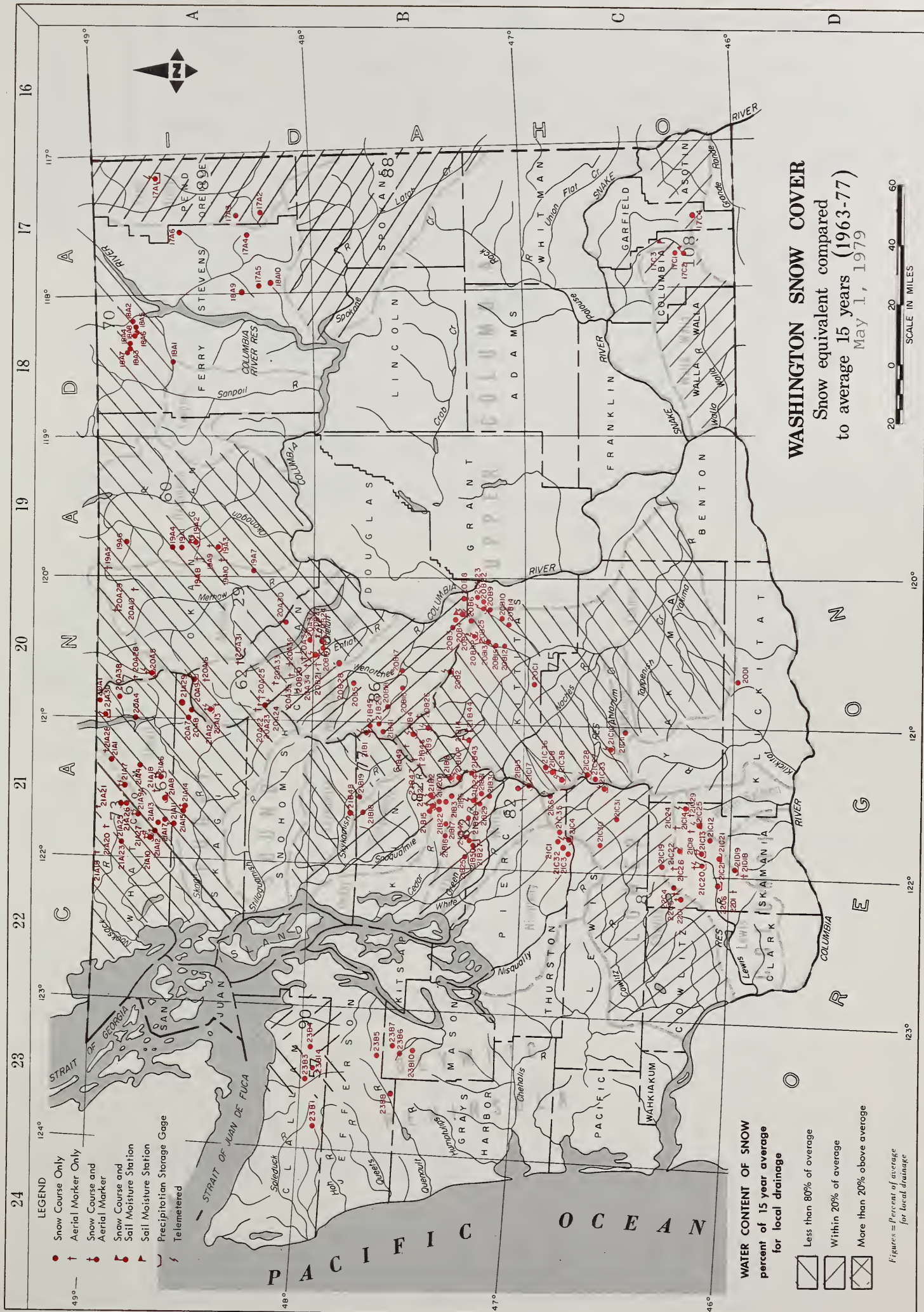
INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	
UPPER COLUMBIA DRAINAGE						
Pend Oreille River						
Boyer Mountain	1742	7	31N	43E	5250	
Bunchgrass Meadow	1741	24	37N	44E	5000	
Winchester Creek	1743	30	33N	43E	2970	
Kettle River						
Boulder Road	1842	36	39N	36E	1450	
Bute Creek	1843	28	39N	35E	4070	
Cabin Creek	1848	5	38N	36E	3170	
Goat Creek	1844	26	39N	36E	3595	
Snow Caps Creek	1845	3	38N	35E	2150	
Snow Caps Trail	1846	5	38N	36E	2720	
Summit G. S.	1847	20	39N	35E	4600	
Colville River						
Baird	1746	19	36N	42E	3215	
Carlson	1849	34	32N	38E	2885	
Chewelah	1744	11	32N	41E	4925	
Stranger Mountain	1745	26	31N	38E	4990	
Togo	18410	6	29N	38E	3370	
Sanpoil River						
Sherman Creek Pass	1841	19	36N	35E	5350	
Okanogan River						
Clark	1948a	2	36N	23E	7000	
Muckamuck	1949a	20	36N	24E	6750	
Mutton Creek No. 1	1941	30	37N	24E	5700	
Mutton Creek No. 2	1944	19	37N	24E	6000	
Payasayten	20428a	32	40N	18E	4300	
Rusty Creek	1943P	18	35N	24E	4000	
Salmon Meadows	1942PM	33	37N	24E	4500	
Starvation Mtn.	19410a	15	35N	23E	6750	
Touts Coulee	1946	30	39N	25E	2845	
Methow River						
Billy Goat Pass	20410a	10	38N	20E	6400	
Dollar Watch	20429a	8	39N	20E	7000	
Harts Pass	2045AP	7	37N	18E	6500	
Horseshoe Basin	1945a	15	40N	23E	7000	
Loup Loop	1947	36	34N	23E	4650	
Chelan Lake Basin						
Cloudy Pass	2042a	12	31N	15E	6500	
Greenwood Flat	20425a	3	31N	16E	5540	
Little Meadows	20424a	8	31N	16E	5275	
Lyman Lake	20423a	18	31N	16E	5900	
Park Creek Flat	20423a	19	34N	16E	2220	
Park Creek Ridge	20412a	18	34N	16E	4600	
Petersons	20416a	3	34N	17E	3730	
Rainy Pass	2049	21	35N	17E	4780	
Safety Harbor	20430a	32	31N	20E	6300	
War Creek Pass	20431a	34	33N	18E	6500	
Entiat River						
Blue Creek G.S.	20828a	19	28N	18E	5425	
Griff	20819	34	28N	19E	1600	
Entiat Meadows	20433a	28	31N	17E	4540	
Entiat River Trail	20434a	2	29N	17E	3325	
Four Mile Ridge	20827a	15	28N	19E	6800	
Fox Camp	20436a	17	30N	18E	6510	
Pope Ridge	20820P	22	29N	18E	3540	
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540	
Pugh Ridge	20432a	34	30N	18E	6725	
Shady Pass	20437	20	29N	19E	6200	
Snow Brushy	20435a	21	30N	17E	3910	
Tommy Creek	20821a	10	28N	18E	4900	
Wenatchee River						
Berne-Mill Creek	21823	7	26N	15E	3170	
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240	
Blawie Pass No. 2	2082P	35	22N	17E	4270	
Chiwaukum G. S.	20816	4	25N	17E	1810	
Lake Wenatchee	2085	33	27N	17E	1970	
Leavenworth R. S.	20817	4	24N	17E	1127	
Merritt	20818	1	26N	16E	2140	
Stevens Pass	21819	14	26N	13E	4070	
Stevens Pass Sand Shed	21845	12	26N	19E	3700	
Snoqualmie River						
Alpine Meadow	21848	31	27N	1	9E	3500
Olallie Meadows	2182	19	22N	1	11E	3625
South Fork Tolt	21818	26	26N	9E	1900	
Skykomish River						
Lake Elizabeth	21819	33	26N	10E	2900	
Snoqualmie River						
Alpine Meadow	21848	31	27N	1	9E	3500
Olallie Meadows	2182	19	22N	1	11E	3625
South Fork Tolt	21818	26	26N	9E	1900	
Skokomish River						
Black and White	2387	17	24N	12E	4200	
Black and White Lakes	2386	16	24N	12E	4200	
Four Stream	23810	1	23N	6W	5200	
Home Sweet Home	23885	28	25N	5W	3900	
Sundown Pass	23888	25	24N	7N	3900	
Soleduck River						
Deer Lake	2381	14	28N	9W	3900	
LEGEND						
NUMBERING SYSTEM EXPLANATION						
21A7 SNOW CLOSET ONLY						
21A7A SNOW CLOSET AND AIRIAL MARKER						
21A7M SNOW CLOSET AND SOIL MOISTURE STATION						
21A7P SNOW CLOSET AND PRECIPITATION STORAGE GAGE						
21A7SP SNOW CLOSET AND PRECIPITATION STORAGE GAGE						
21A7P SNOW CLOSET AND PRECIPITATION STORAGE GAGE						
21A7SP SNOW CLOSET AND PRECIPITATION STORAGE GAGE						

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	1742	7	31N	43E	5250
Bunchgrass Meadow	1741	24	37N	44E	5000
Winchester Creek	1743	30	33N	43E	2970
Kettle River					
Boulder Road	1842	36	39N	36E	1450
Bute Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Goat Creek	1844	26	39N	36E	3595
Snow Caps Creek	1845	3	38N	35E	2150
Snow Caps Trail	1846	5	38N	36E	2720
Summit G. S.	1847	20	39N	35E	4600
Colville River					
Baird	1746	19	36N	42E	3215
Carlson	1849	34	32N	38E	2885
Chewelah	1744	11	32N	41E	4925
Stranger Mountain	1745	26	31N	38E	4990
Togo	18410	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	1841	19	36N	35E	5350
Okanogan River					
Clark	1948a	2	36N	23E	7000
Muckamuck	1949a	20	36N	24E	6750
Mutton Creek No. 1	1941	30	37N	24E	5700
Mutton Creek No. 2	1944	19	37N	24E	6000
Payasayten	20428a	32	40N	18E	4300
Rusty Creek	1943P	18	35N	24E	4000
Salmon Meadows	1942PM	33	37N	24E	4500
Starvation Mtn.	19410a	15	35N	23E	6750
Touts Coulee	1946	30	39N	25E	2845
Methow River					
Billy Goat Pass	20410a	10	38N	20E	6400
Dollar Watch	20429a	8	39N	20E	7000
Harts Pass	2045AP	7	37N	18E	6500
Horseshoe Basin	1945a	15	40N	23E	7000
Loup Loop	1947	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	2042a	12	31N	15E	6500
Greenwood Flat	20425a	3	31N	16E	5540
Little Meadows	20424a	8	31N	16E	5275
Lyman Lake	20423a	18	31N	16E	5900
Park Creek Flat	20423a	19	34N	16E	2220
Park Creek Ridge	20412a	18	34N	16E	4600
Petersons	20416a	3	34N	17E	3730
Rainy Pass	2049	21	35N	17E	4780
Safety Harbor	20430a	32	31N	20E	6300
War Creek Pass	20431a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20828a	19	28N	18E	5425
Griff	20819	34	28N	19E	1600
Entiat Meadows	20433a	28	31N	17E	4540
Entiat River Trail	20434a	2	29N	17E	3325
Four Mile Ridge	20827a	15	28N	19E	6800
Fox Camp	20436a	17	30N	18E	6510
Pope Ridge	20820P	22	29N	18E	3540
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540
Pugh Ridge	20432a	34	30N	18E	6725
Shady Pass	20437	20	29N	19E	6200
Snow Brushy	20435a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21823	7	26N	15E	3170
Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blawie Pass No. 2	2082P	35	22N	17E	4270
Chiwaukum G. S.	20816	4	25N	17E	1810
Lake Wenatchee	2085	33	27N	17E	1970
Leavenworth R. S.	20817	4	24N	17E	1127
Merritt	20818	1	26N	16E	2140
Stevens Pass	21819	14	26N	13E	4070
Stevens Pass Sand Shed	21845	12	26N	19E	3700

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Bute Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Goat Creek	1844	26	39N	36E	3595
Snow Caps Creek	1845	3	38N	35E	2150
Snow Caps Trail	1846	5	38N	36E	2720
Summit G. S.	1847	20	39N	35E	4600
Colville River					
Baird	1746	19	36N	42E	3215
Carlson	1849	34	32N	38E	2885
Chewelah	1744	11	32N	41E	4925
Stranger Mountain	1745	26	31N	38E	4990
Togo	18410	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	1841	19	36N	35E	5350
Okanogan River					
Clark	1948a	2	36N	23E	7000
Muckamuck	1949a	20	36N	24E	6750
Mutton Creek No. 1	1941	30	37N	24E	5700
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Horseshoe Basin	1945a	15	40N	23E	7000
Loup Loop	1947	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	2042a	12	31N	15E	6500
Greenwood Flat	20425a	3	31N	16E	5540
Little Meadows	20424a	8	31N	16E	5275
Lyman Lake	20423a	18	31N	16E	5900
Park Creek Flat	20423a	19	34N	16E	2220
Park Creek Ridge	20412a	18	34N	16E	4600
Petersons	20416a	3	34N	17E	3730
Rainy Pass	2049	21	35N	17E	4780
Safety Harbor	20430a	32	31N	20E	6300
War Creek Pass	20431a	34	33N	18E	6500
Entiat River					
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Griff	20819	34	28N	19E	1600
Entiat Meadows	20433a	28	31N	17E	4540
Entiat River Trail	20434a	2	29N	17E	3325
Four Mile Ridge	20827a	15	28N	19E	6800
Fox Camp	20436a	17	30N	18E	6510
Pope Ridge	20820P	22	29N	18E	3540
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540
Pugh Ridge	20432a	34	30N	18E	6725
Shady Pass	20437	20	29N	19E	6200
Snow Brushy	20435a	21	30N	17E	3910
Tommy Creek	20821a	10	28N	18E	4900
Wenatchee River					
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Berne-Mill Creek (New)	21841SP	13	26N	14E	3240
Blawie Pass No. 2	2082P	35	22N	17E	4270
Chiwaukum G. S.	20816	4	25N	17E	1810
Lake Wenatchee	2085	33	27N	17E	1970
Leavenworth R. S.	20817	4	24N	17E	1127
Merritt	20818	1	26N	16E	2140
Stevens Pass	21819	14	26N	13E	4070
Stevens Pass Sand Shed	21845	12	26N	19E	3700

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
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Winchester Creek	1743	30	33N	43E	2970
Kettle River					
Boulder Road	1842	36	39N	36E	1450
Bute Creek	1843	28	39N	35E	4070
Cabin Creek	1848	5	38N	36E	3170
Goat Creek	1844	26	39N	36E	3595
Snow Caps Creek	1845	3	38N	35E	2150
Snow Caps Trail	1846	5	38N	36E	2720
Summit G. S.	1847	20	39N	35E	4600
Colville River					
Baird	1746	19	36N	42E	3215
Carlson	1849	34	32N	38E	2885
Chewelah	1744	11	32N	41E	4925
Stranger Mountain	1745	26	31N	38E</	



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1P	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Groat Creek	18A4	26	39N	35E	3595
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Calville River					
Boird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Cheveloh	17A4	41	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanagan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Muttan Creek No. 1	19A1	30	37N	24E	5700
Muttan Creek No. 2	19A4	19	37N	24E	6000
Poysayten	20A2Ba	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2PM	33	37N	24E	4500
Sparvation Mtn.	19A10a	15	35N	23E	6750
Tauts Caulce	19A6	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Harris Watch	20A29a	8	39N	20E	7000
Darts Pass	20A5AP	7	37N	18E	6500
Harsheae Basin	19A5a	15	40N	23E	7000
Laur Loop	19A7	36	34N	23E	4450

Chelan Lake Basin

Claydy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A23a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	19	34N	16E	2220
Park Creek Ridge	20A12A	8	34N	16E	4600
Petersens	20A16a	3	34N	17E	3730
Rainy Pass	20A9P	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pape Ridge	20B20P	22	29N	18E	3540
Pape Ridge Snow Pillaw	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					

Wenatchee River

21823P	7	26N	15E
21841SP	3	26N	32W
Berne-Mill Creek		26N	14E
Berne-Mill Creek (New)	21841SP		
Blewett Pass Na, 2	2082p	35	22N
Chiwaukum G. S.	20816	4	25N
Chiwaukum G. S.	20816	4	25N
Lake Wendatchee	20815	33	27N
Lake Wendatchee	20817	33	27N
Leavenworth R. S.	20857	1	24N
Merritt	20818	4	26N
Stevens Pass	2181P	14	26N
Stevens Pass	21845	12	26N
Stevens Sand Shed	20825SP	10	26N
Trout #2		20N	20E

LOWER COLUMBIA DRAINAGE

Lower Columbia Drainage				
Asotin Creek				
Spruce Springs	17C4	9	8N	40E 5700
Mill Creek				
Cause	17C3m	2	9N	40E 3370
Hamestead	17C1	11	9N	40E 4030
Martin Springs (Helmrs 5M)	17C2M	23	9N	40E 4400
Klickitat River				
Satus Pass	20D1	21	6N	17E 4030
White Salmon River				
Cultus Creek	21C12	35	7N	8E 4000
Lewis River				
Blue Lake	21C22a	19	9N	8E 4800
Bab's Trail	21C21P	25	8N	7E 2200
Calamity Ridge	22D1a	8	5N	5E 2500
Council Pass	21C18a	24	9N	4200 9E
Divide Meadow	21C29a	21	9N	10E 5600
Grand Meadow	21C25P	28	8N	9E 3500

Lewis River (continued)

Lane Pine Shelter	21C26P	8	9N	7E	3800
Marble Mountain	22C5a	24	8N	5E	3200
New Muddy River	22C6P	36	8N	6E	2000
Oldman Pass	21D19P	22	6N	7E	3100
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C4	29	9N	6E	2100
Sponser Meadow	21C20aP	16	8N	7E	3400
Surprise Lakes	21C13aP	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000

Cawltiz River					
Cayuse Pass	21C6	15	16N	10E	5300
Maquinna Meadows	21C19	33	10N	7E	4100
Okanapcoash	21C32	28	15N	10E	2200
Packwood Lake	21C31	21	13N	10E	2870
Pigtail Peak	21C33aP	11	13N	11E	5900
Patata Hill	21C14P	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250

PUGET SOUND DRAINAGE

Nisqually River		
Ghost Forest	21C4P	23 15N 8E 4550
Longmire	21C3	29 15N 8E 2760
Paradise Park (New)	21C35	13 15N 8E 5500
Stem Glade	21C1	13 15N 8E 5050

White River

	21B13	30	18N	11E	6000
Carroll Pass					
	Green River				
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Caucar Mountain	21B42SP	21	21N	9E	3200

Run No.	2	3	21827	14	20N
Run No.	2	3	21828	13	20N

Cedar River	
City Cabin	2183 10 21N 10E 2390'
Mt. Gardner	2182P 30 22N 10E 3300
Mt. Gardner Aux.	21822 31 22N 10E 2500
Mt. Lindsay	21816 31 22N 9E 2500
Mt. Washington	21815 8 22N 9E 3000
Rex River	21817 11 21N 9E 2400
South Fork Cedar	2186 24 21N 10E 3000
Trinkham Creek	21820 1 21N 10E 3400
Grass Mountain No. 3	21828 12 20N 8E 3100
Lester Creek	21829 36 20N 10E 3100
Lynn Lake	21850 22 20N 8E 4000
Sawmill Ridge	21831 5 19N 11E 4700
Snawshoe Butte	218435Pa14 20N 11E 5000
Stampede Pass	21810P 25 21N 11E 3860
Twin Camp	21830 18 19N 11E 4100

Snoqualmie River

	Alpine Meadow	Ollalie Meadows	South Fork Tolt	Skykomish River	Lake Elizabeth
3500	21848	2182P	21818	21819	21819
3625	27N	22N	26N	33	36N
1900	9E	11E	9E	10E	2900

Lewis River (continued)

Jugait River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Brown Top	21A28a	26	40N	12E	6000
Devils Park	20A4	34	38N	14E	5900
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows (New)	20A38	8	40N	16E	5000
Granite Creek	21A29	25	36N	16E	3500
Meadows Cabins	20A8	29	36N	14E	1900
New Hazareen Lake	20A7	19	40N	14E	4800
Thunder basin	21A30P	10	35N	14E	2200
Baker River					
Baker Pass	21A27a	1	37N	7E	4900
Dock Butte	21A11A	8	36N	38E	5800
Easy Pass	21A7A	19	39N	11E	3200
Jasper Pass	21A6A	17	38N	11E	5400
Komo Kulshan	21A17	31	37N	9E	800
Marten Lake	21A9A	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Racky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14A	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600

21A20A 20

Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Panorama Snow Pillow	21A25SP	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200

OLYMPIC PENINSULA

Dungeness River			
Deer Park	2384	1	28N 5W 5200
Morse Creek			
Cox Valley	23814	31	29N 6W 4500
Elwha River			
Hurricane	2383	36	29N 7W 4500
Skokomish River			
Black and White	2387	17	24N 5W 4200
Black and White Lakes	2386	16	24N 5W 4700
Four Stream	23810	1	23N 6W 3000
Home Sweet Home	2385	28	25N 5W 5200
Sundown Pass	2388	25	24N 7W 3900
Soleaduck River			
Deer Lake	2381	14	28N 9W 3900

LEGEND

21A7	Snow Course Only
21A7a	Snow Course And Aerial Marker
21A7b	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Salt Moisture Station
21A7P	Snow Course And Precipitation Storage Gage
21A7b	Precipitation Storage Gage
21A7SP	Snow Pillow

WATER SUPPLY OUTLOOK

State of Washington

May 1, 1979

* There was very little change, percentagewise, in the snow *
* pack from that which was reported last month. Of course the *
* snow water equivalent is a lot less and fewer snow courses *
* were measured, but the remaining sites indicate that the *
* snow pack continues to be mostly subnormal except in the *
* southeastern portion of the state. This means that the *
* water supply outlook will be just about the same as last *
* month. River flows were mostly below normal; precipitation *
* was mostly below normal; and temperatures were mostly below *
* normal. This delayed runoff will help in meeting the water *
* needs of the users later in the summer water-use season. *
* *

SNOW COVER

Considerably fewer snow courses are measured on May 1 than were measured on April 1, and those snow courses that are measured are generally at the upper elevations. The range of snow pack now extends from a low of 29 percent of normal for the Methow River to a high of 8 percent above normal for the Asotin Creek in southeastern Washington. One of the key watersheds is the Okanogan Drainage, measured by thirty snow courses. This watershed has a snow pack that is 63 percent of last year, 90 percent greater than 1977, and 60 percent of average. The Yakima Drainage, measured by fifteen snow courses, has a snow pack that is 71 percent greater than was measured last year at this time, 163 percent greater than was measured in 1977, yet still 25 percent below normal. On the west side, the Skagit Drainage, as measured by fourteen snow courses, has a snow pack that is 32 percent greater than last year's measurements, 255 percent greater than was measured in 1977, but 33 percent below normal. On the Olympic Peninsula, the snow pack has improved, percentagewise, about 8 percent.

RESERVOIRS

The five irrigation reservoirs in the Yakima Basin have 91 percent of normal water in storage as of May 1. This includes Cle-Elum Reservoir which will be unavailable for irrigation water storage this summer. The remaining four reservoirs have better than normal amounts of water in storage now. The power reservoirs generally are in good shape compared to normal, with only the Chelan Lake storage being below normal, and that 25 percent below. In all probability all reservoirs will fill with the spring runoff.

PRECIPITATION

As reported by the National Weather Service, rainfall was spotty throughout the state of Washington and the Columbia Basin. In the Drainage Division above Castlegar, rainfall was 11 percent below normal. In the Pend Oreille-Spokane Drainage Division, precipitation was 9 percent above normal; while northeastern Washington was 1 percent below normal. The bright spot for April precipitation was southeastern Washington which had rainfall 36 percent above normal. Along the eastern slopes of the Cascades, precipitation was 72 percent, and on the western slopes of the Cascades, 88 percent.

STREAMFLOW

During the month of April, river flows were generally below normal except for those areas that had above normal precipitation. Flows range from a low of 52 percent below normal for the Klickitat River, as measured near Pitt, to a high of 18 percent above for the Walla Walla River as measured at Touchet. Forecasted streamflows for the 1979 irrigation season now range from a low of 55 percent of normal for the Cowlitz at Castlerock to a high of 8 percent above normal for Mill Creek as measured at Walla Walla. Most streamflow forecasts range in the 70-80 percent of normal category. Numerical forecasts can be found on the following pages.

STREAMFLOW FORECASTS - MAY 1979

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1978 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1979	Seasonal Streamflow in Thousands of Acre-Feet						
		%	Fore-					15-Yr
		15-Yr. Avg.	cast period	1978	1977	1976	Average 63-77	
<u>COLUMBIA BASIN</u>								
<u>COLUMBIA RIVER SYSTEM</u>								
Columbia River	37900	89	May-Sept	40601	29012	50710	42769	
at Birchbank <u>1/</u>	29900	89	May-July	30622	21262	35671	33621	
	20900	89	May-June	20674	15476	22629	23461	
Columbia River	52800	86	May-Sept	58882	36594	73869	61503	
at Grand Coulee <u>1/</u>	43500	86	May-July	46573	27557	55534	50526	
	32500	86	May-June	33599	21162	39056	37764	
Columbia River	58400	87	May-Sept	64144	38555	78958	67050	
bl. Rock Island Dam <u>1/</u>	48400	87	May-July	51416	29394	59978	55578	
	36200	87	May-June	37495	22704	42270	41605	
Columbia River	74100	81	May-Sept	85792	46862	104523	90981	
at The Dalles, OR <u>1/</u>	62000	82	May-July	69552	35710	81716	76007	
	48200	82	May-June	52090	28294	61198	58725	
<u>PEND OREILLE RIVER SYSTEM</u>								
Pend Oreille River	11900	87	May-Sept				13595	
bl. Box Canyon	10700	87	May-July				12286	
	8900	87	May-June				10230	
<u>KETTLE RIVER SYSTEM</u>								
Kettle River	1340	83	May-Sept	1682	973	2197	1616	
nr. Laurier	1265	83	May-July	1504	933	1875	1524	
	1100	81	May-June	1313	865	1589	1358	
Colville River	80	95	May-Sept		17	82	84	
at Kettle Falls	69	95	May-July		13	66	73	
	60	92	May-June		12	58	65	

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1979	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1978	1977	1976	15-Yr. Average 63-77
<u>SPOKANE RIVER SYSTEM</u>							
Spokane River	1550	74	May-Sept			2842	2102
at Post Falls, ID <u>2/</u>	1450	74	May-July			2699	1966
	1350	74	May-June			2457	1833
<u>OKANOGAN RIVER SYSTEM</u>							
Similkameen River	966	67	May-Sept	1377	558	1859	1440
nr. Nighthawk	900	67	May-July	1236	517	1635	1339
	780	70	May-June	1041	460	1262	1114
Okanogan River	1030	65	May-Sept	1513	617	2055	1595
nr. Tonasket	940	65	May-July	1323	553	1706	1441
	800	68	May-June	1109	492	1252	1180
<u>METHOW RIVER SYSTEM</u>							
Methow River	655	70	May-Sept		255	1121	938
nr. Pateros	605	70	May-July		221	963	864
	495	69	May-June		192	718	718
<u>CHELAN RIVER SYSTEM</u>							
Chelan River	850	75	May-Sept	1179	510	1365	1139
at Chelan <u>3/</u>	750	76	May-July	1008	392	1083	982
	575	78	Apr-June	750	314	735	736
Stehekin River	610	73	May-Sept	795	422	960	838
at Stehekin	515	74	May-July	656	310	737	698
	380	74	May-June	469	239	473	512
Entiat	170	75	May-Sept	264	80	290	227
nr. Ardenvoir	155	76	May-July	237	65	247	204
	125	79	May-June	185	54	170	159
<u>WENATCHEE RIVER SYSTEM</u>							
Wenatchee River	890	76	May-Sept	1115	506	1394	1172
at Plain	800	78	May-July	975	414	1148	1032
	630	80	May-June	749	352	776	778
Wenatchee River	1200	75	May-Sept	1490	673	1903	1595
at Peshastin	1040	74	May-July	1311	564	1576	1414
	830	77	May-June	1010	487	1067	1077
Stemilt Basin	110*	80	May-Sept			144*	
nr. Wenatchee							

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1979	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr.			
		15-Yr. Avg.	cast period	1978	1977	1976	15-Yr. Average 63-77
<u>YAKIMA RIVER SYSTEM</u>							
Yakima River	100	82	May-Sept	79	50	136	122
nr. Martin <u>4/</u>	90	82	May-July	66	39	120	110
	76	84	May-June	57	39	96	91
Yakima River	690	75	May-Sept	634	352	929	915
at Cle Elum <u>5/</u>	600	73	May-July	562	276	817	822
	520	75	May-June	471	238	645	691
Yakima River	1300	72	May-Sept	1504	596	2116	1815
nr. Parker <u>6/</u>	1150	72	May-July	1218	451	1800	1601
	1000	75	May-June	1014	405	1404	1340
Kachess River	90	86	May-Sept	76	40	120	105
nr. Easton <u>7/</u>	85	87	May-July	70	33	109	98
	75	91	May-June	63	32	87	82
Cle Elum River	340	80	May-Sept	340	186	506	423
nr. Roslyn <u>8/</u>	310	82	May-July	299	150	429	379
	250	83	May-June	244	128	314	302
Bumping River	94	71	May-Sept	97	49	163	132
nr. Nile <u>9/</u>	83	70	May-July	85	41	140	119
	70	75	May-June	69	37	98	93
American River	77	68	May-Sept		39	120	114
nr. Nile	71	69	May-July		33	103	103
	58	71	May-June		29	73	82
Tieton River	160	72	May-Sept	201	109	267	223
at Tieton Dam <u>10/</u>	130	71	May-July	158	73	208	183
	105	76	May-June	119	57	145	139
Naches River	550	72	May-Sept	560	256	908	768
nr. Naches <u>11/</u>	470	69	May-July	495	204	770	680
	400	72	May-June	403	174	579	555
Ahtanum Creek	27	70	May-Sept		6	43	39
nr. Tampico <u>12/</u>	24	69	May-July		5	37	35
	19	66	May-June		4	29	29

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1979	Seasonal streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1978	1977	1976	15-Yr. Average 63-77
<u>LOWER COLUMBIA RIVER SYSTEM</u>							
Mill Creek	8.3	108	May-Sept		0.8	10.6	7.7
at Walla Walla	8.1	108	May-July		0.6	10.4	7.5
	7.9	108	May-June		0.5	10.4	7.3
Lewis River	590	63	May-Sept		749	957	960
at Ariel <u>13/</u>	450	57	May-July		551	801	790
	380	58	May-June		482	662	654
Cowlitz River	1010	61	May-Sept		1165	1881	1717
bl. Mayfield Dam	830	57	May-July		888	1548	1445
	670	59	May-June		763	1169	1144
Cowlitz River	1190	55	May-Sept		1598	2302	2170
at Castle Rock <u>14/</u>	940	52	May-July		1207	1872	1804
	780	54	May-June		1042	1442	1432
<u>OLYMPIC PENINSULA</u>							
<u>DUNGENESS RIVER SYSTEM</u>							
Dungeness River	126	88	May-Sept		82	143	143
nr. Sequim	102	90	May-July		59	110	113
	73	92	May-June		45	74	79
<u>PUGET SOUND</u>							
<u>SKAGIT RIVER SYSTEM</u>							
Skagit River	1515	70	May-Sept		560	2734	2161
at Newhalem <u>15/</u>	1390	69	May-August		475	2521	2017
	1210	68	May-July		368	2113	1776
	865	67	May-June		261	1386	1290
<u>ELWHA RIVER SYSTEM</u>							
Elwha River	420	88	May-Sept		298	551	480
nr. Port Angeles	330	87	May-July		223	430	381
<u>GREEN RIVER SYSTEM</u>							
Green River	165	71	May-Sept		140	228	233
bl. Howard Hanson Dam <u>16/</u>							
<u>CEDAR RIVER SYSTEM</u>							
Cedar River	66	71	Apr-Sept		55	91	93
nr. Cedar Falls							

- 13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about May 1, 1979 as percent of the same date in 1978 and 1977 and average of record.

Average of record.		No. of	1979 Snow Water Expressed		
Tributary Basin	Courses		as percent of		
	Average	1978	1977	1963-77 Avg.	
<u>UPPER COLUMBIA BASIN</u>					
Pend Oreille	14	140	402	89	
Kettle	11	74	296	70	
Spokane	8	154	340	88	
Okanogan	30	63	190	60	
Methow	3	25	152	29	
Chelan	1	63	135	62	
Entiat	8	51	372	60	
Wenatchee	9	172	480	86	
Squilchuck	1	87	-	59	
Stemilt	2	72	-	86	
Colockum	3	83	-	64	
Yakima	15	171	363	75	
<u>LOWER COLUMBIA BASIN</u>					
Mill Creek	1	271	-	151	
Asotin	1	166	1483	108	
Cowlitz	1	135	-	81	
<u>PUGET SOUND</u>					
White	2	103	254	82	
Green	3	152	426	82	
Snoqualmie	1	211	277	82	
Skykomish	2	106	288	77	
Skagit	14	132	355	67	
Nooksack	1	131	165	73	
Baker	9	100	141	63	
<u>OLYMPIC PENINSULA</u>					
Morse Creek	1	116	215	78	
Elwha	1	122	189	57	
Dungeness	1	180	281	90	

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured May 1			
			1979	1978	1977	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	260.5	202.4	179.3	238.4
Columbia	Franklin D. Roosevelt Lake	5232.0	909.9	860.4	1688.2	867.8
Columbia	Banks Lake	714.9	393.4	505.0	464.3	442.8
Okanogan	Conconully Reservoir	13.0	10.3	5.7	7.4	7.7
Okanogan	Salmon Lake	10.5	10.5	7.4	9.3	8.0
Chelan	Lake Chelan	676.1	163.4	242.2	268.8	219.0
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	117.0	150.4	118.5	113.8
Kachess	Kachess Lake	239.0	228.0	237.2	234.2	194.2
Cle Elum	Lake Cle Elum	436.9	180.9	373.5	441.3	295.9
Bumping	Bumping Lake	33.7	13.3	32.4	26.2	11.6
Tieton	Rimrock Lake	198.0	146.4	170.6	154.6	136.6
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	731.6	793.0	539.5	711.5
Skagit	Diablo Reservoir	90.6	86.8	83.3	86.8	86.4
Skagit	Gorge Reservoir	9.8	8.0	7.8	7.1	8.1

^{1/} Based on Active Storage

* 15-yr. Average 1963-1977

SOIL MOISTURE - May

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content Inches as of May 1		
					1979	1978	1977
<u>OKANOGAN</u>							
Salmon Meadows	19A2M	4500	48	5.4	-	-	3.8
Trout Creek	3-M	3600	48	7.3	Late	5.4	4.0
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	10.1	9.1	6.4
Helmrs	17C2M	4400	48	12.0	-	9.4	10.1
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	11.4	12.6	8.0

FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile Depth	Inches Total Capacity	Soil Moisture Content (Inches) as of Oct. 1		
					1978	1977	1976
<u>OKANOGAN</u>							
Salmon Meadows	19A02M	4500	48	5.4	-	-	3.4
Trout Creek	3-M	3600	48	7.3	3.7	3.2	3.4
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	-	-	-
Lake Cle Elum	21B14M	2200	48	12.8	-	-	-
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	5.9	-	-
Helmrs	17C2M	4400	48	12.0	8.2	-	-
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	10.3	6.6	-

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	FALL		WINTER		SPRING	
	Sept-Oct Observed	1978 <u>2/</u> Departure	Nov.-1978--Mar.-1979 Observed	Departure	April 1979 Observed	Departure
Columbia in Canada	6.29	+1.27	12.00	-3.51	1.53	-0.18
Pend Oreille - Spokane	2.09	-1.95	13.90	-4.36	1.99	+0.17
Northeastern Washington	1.74	-0.73	7.27	-2.13	1.24	-0.02
Southeastern Washington	1.22	-1.29	9.82	-0.61	2.08	+0.55
Central Washington	0.60	-0.37	3.34	-1.94	0.52	-0.13
North Central Washington	2.22	+0.63	3.78	-2.76	0.55	-0.30
Northwest Slope Cascades	9.89	-3.32	43.16	-12.23	6.43	-0.21
Southwest Slope Cascades	6.18	-2.50	26.74	-14.90	3.64	-0.98

Northeastern Washington	- Lower Spokane, Colville, Sanpoil and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon and Palouse Drainages.
Central Washington	- Yakima, Wenatchee and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

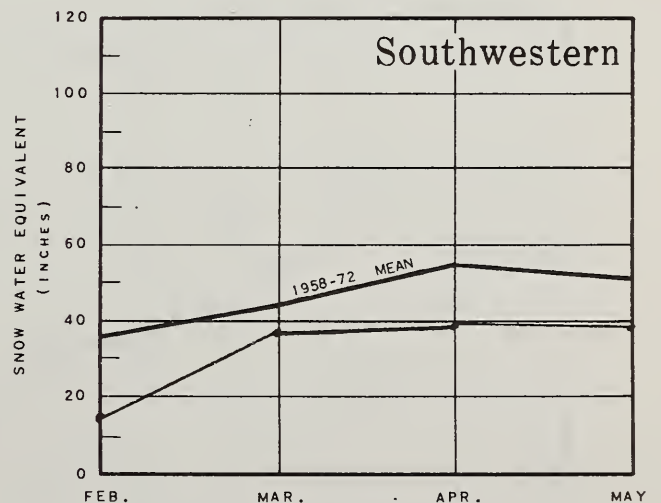
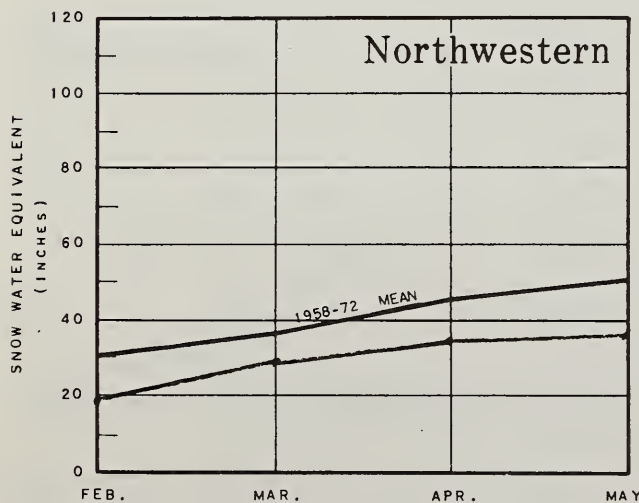
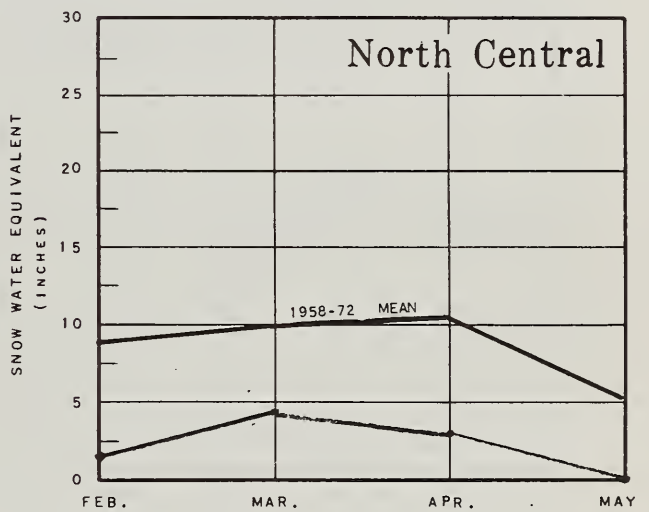
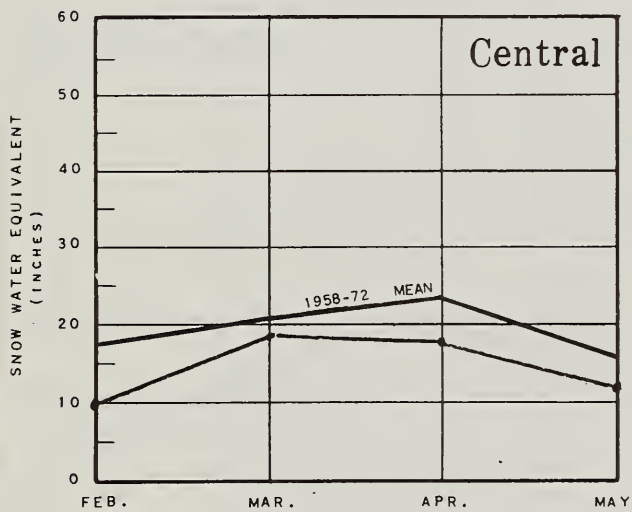
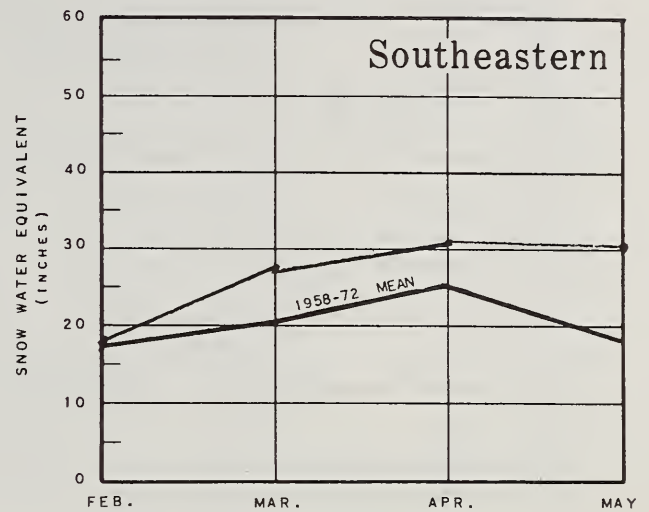
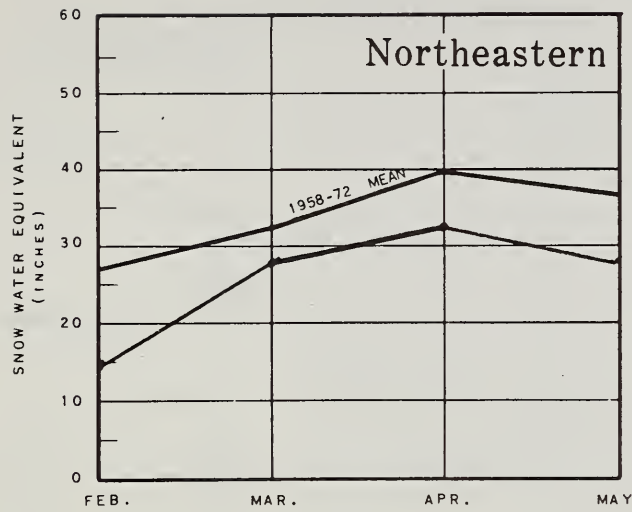
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1979

DRAINAGE AREAS

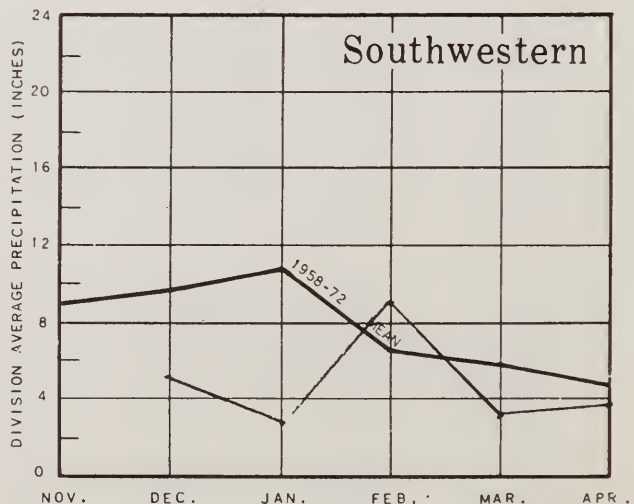
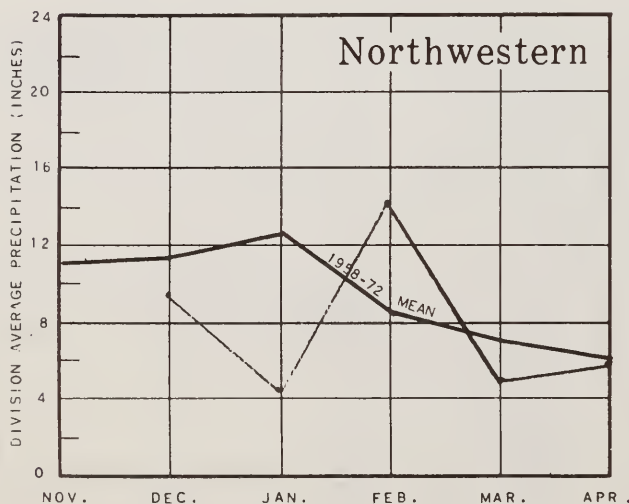
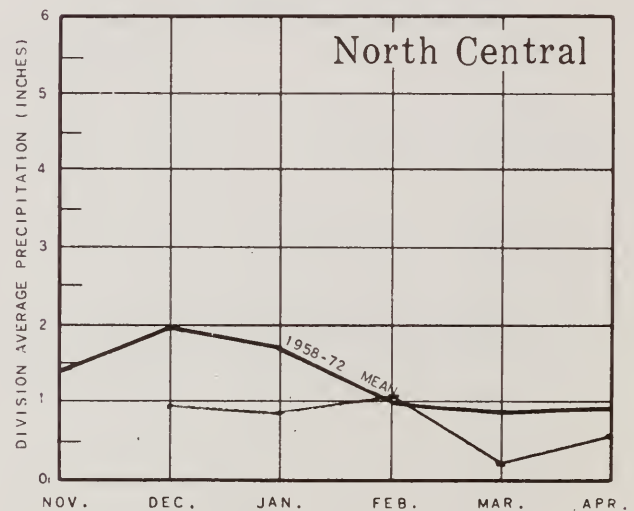
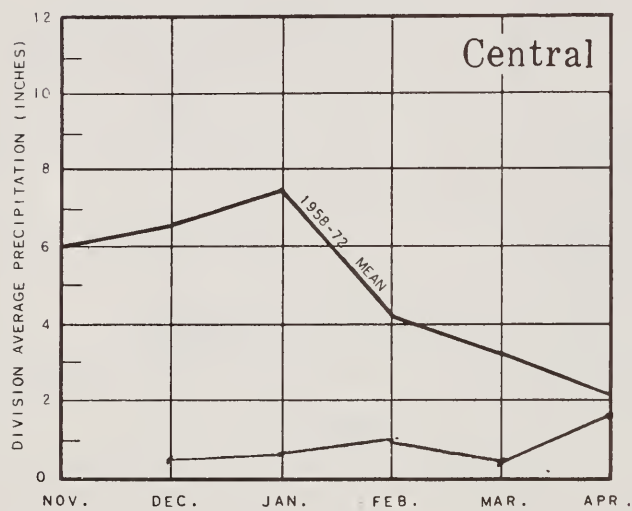
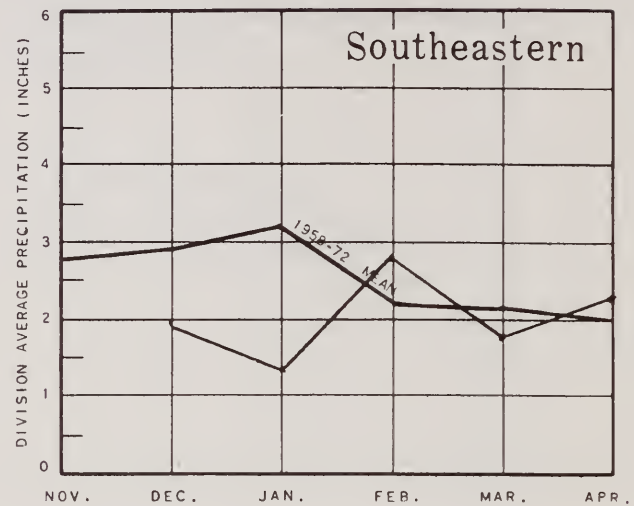
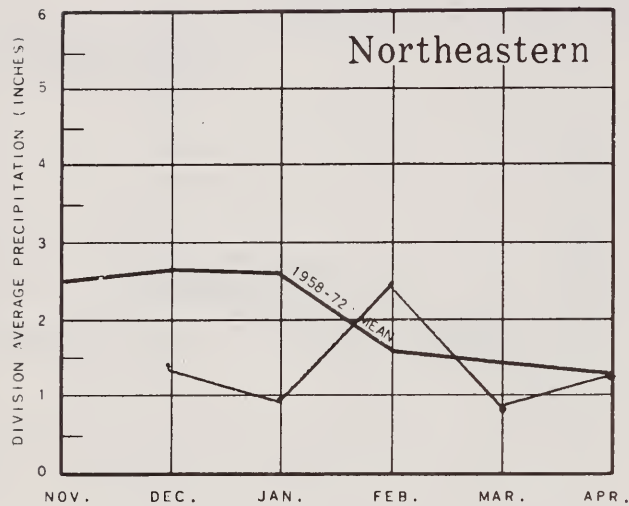


Selected Snow Survey Courses by Soil Conservation Service

WASHINGTON VALLEY PRECIPITATION

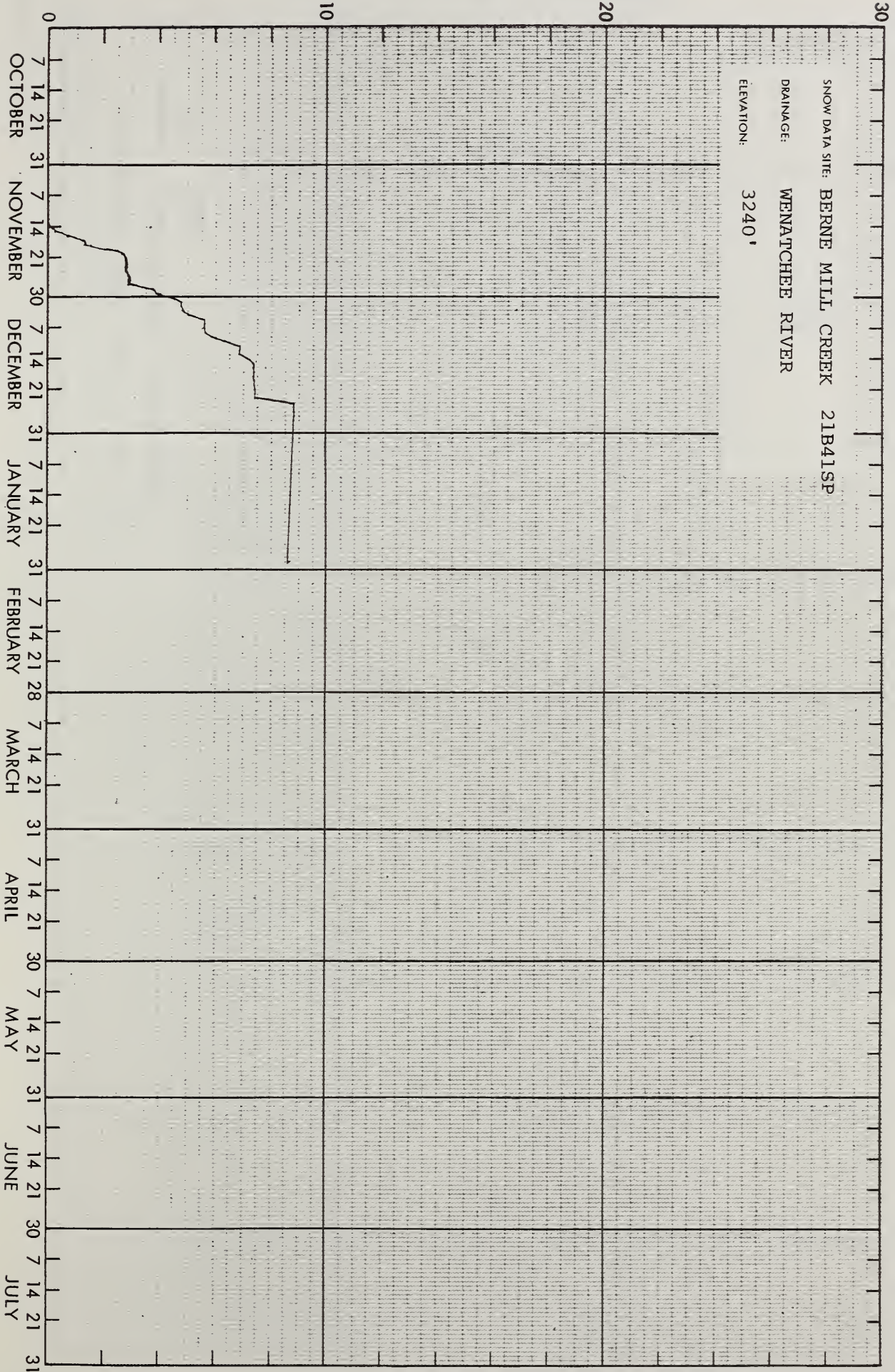
1979

DRAINAGE AREAS



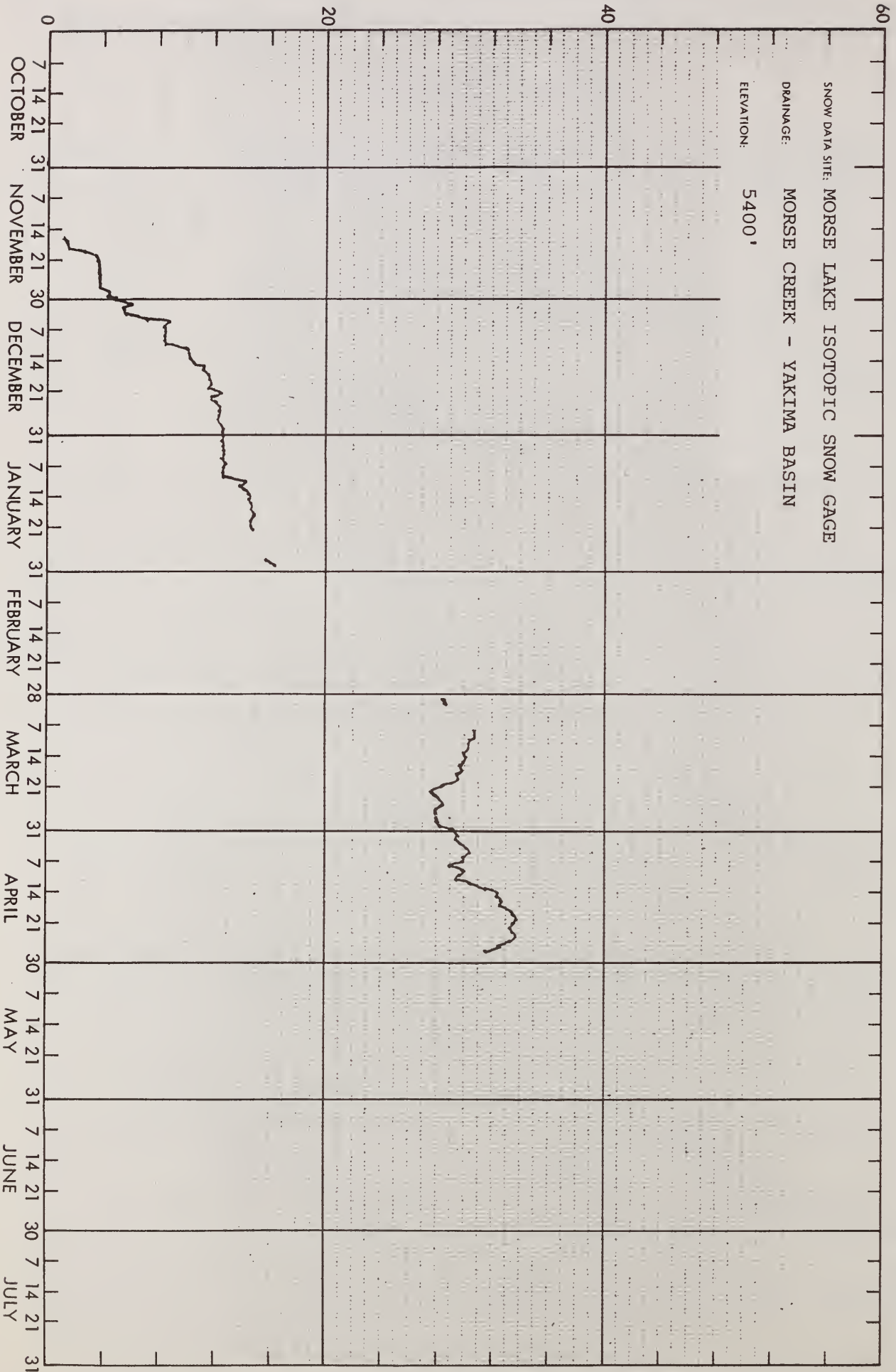
Preliminary Analysis by National Weather Service

INCHES OF WATER IN SNOWPACK



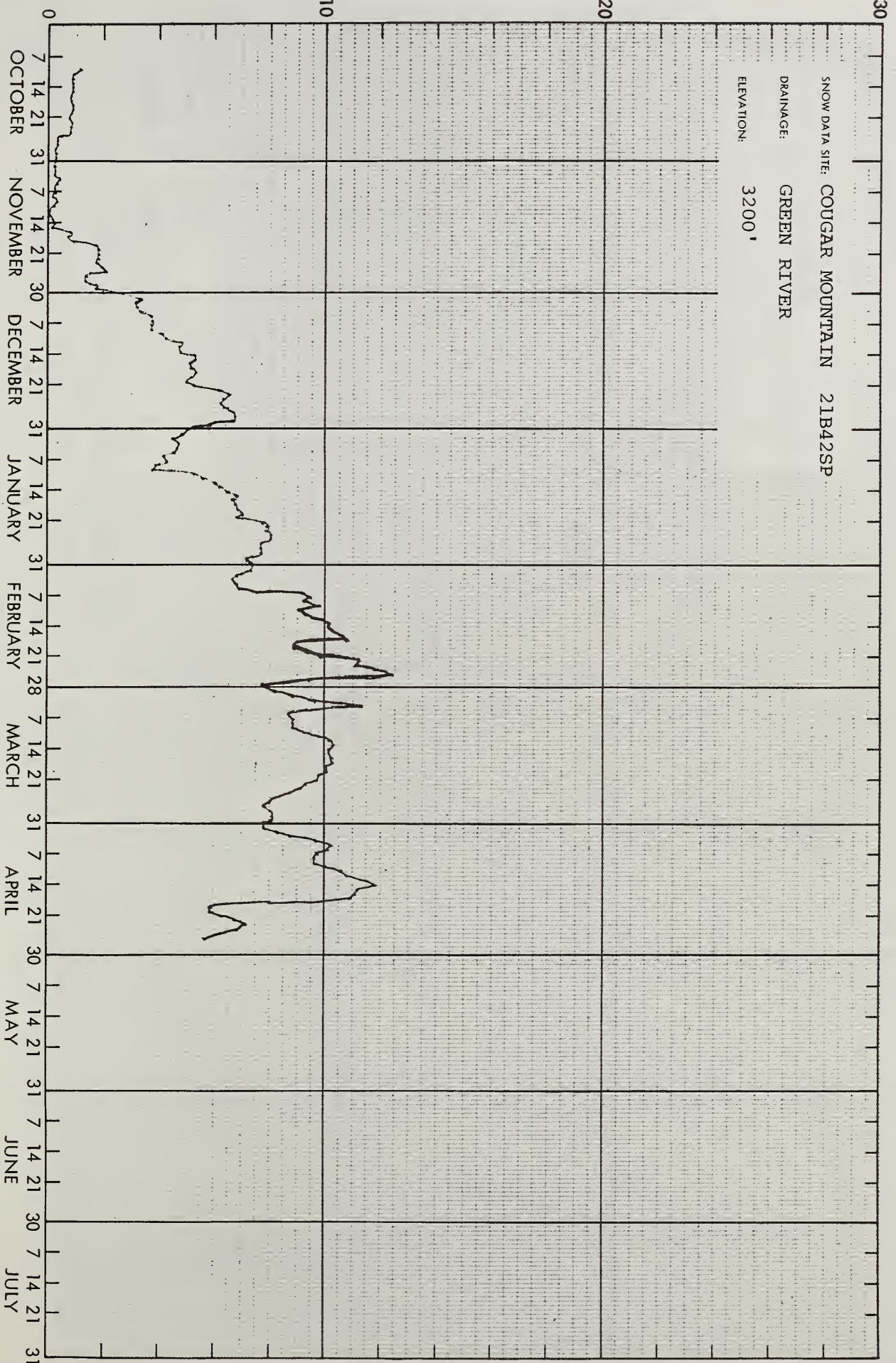
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INCHES OF WATER IN SNOWPACK



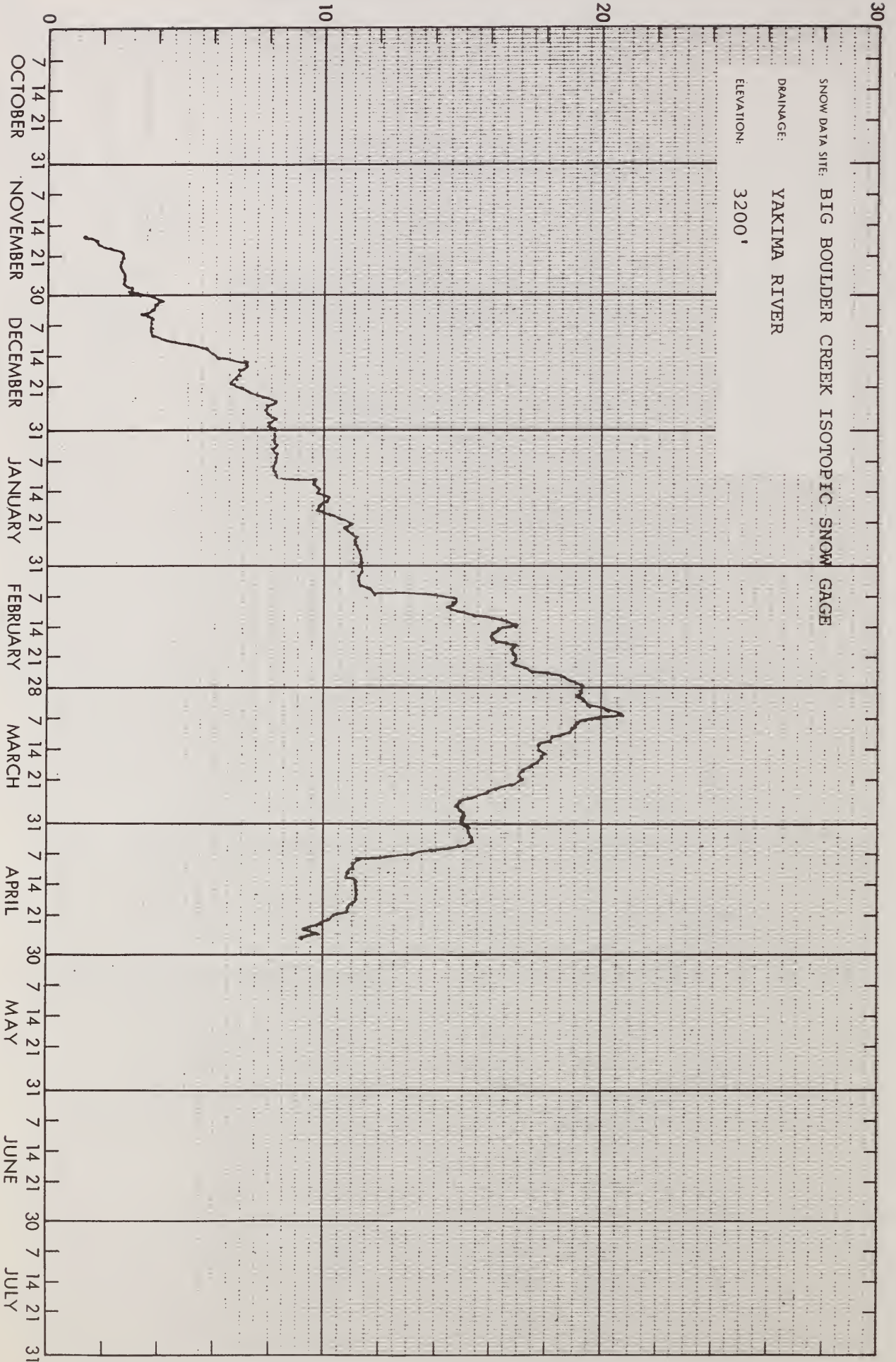
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INCHES OF WATER IN SNOWPACK



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INCHES OF WATER IN SNOWPACK



SNOW DATA TO MAY 1, 1979 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

PEND OREILLE RIVER

Baree Creek	15B11	5500	4/30	87	42.0	37.8	49.5
Baree Midway	15B16	4600	4/30	72	32.0	20.8	35.1
Baree Trail	15B15	3800	4/30	0	0.0	0.0	1.8
Benton Meadow	16A02	2344	4/26	0	0.0	0.0	0.0
Benton Spring	16A03	4900	4/26	39	16.7	10.7	16.7
Boyer Mountain	17A02	5250	4/27	49	21.4	27.2	25.2
Brush Creek Timber	14A13	5000	4/25	28	10.4	4.1	8.1
Bunchgrass Meadow	17A01	5000	4/27	50	22.7	28.9	30.0
Heart Lake Trail	14C10	4800	4/30	45	21.3	13.3	19.1
Hoodoo Basin	15C10	6000	4/30	107	49.6	52.4	55.6
Hoodoo Creek	15C01	5900	4/30	108	49.3	45.4	52.0
Lookout	15B02	5250	4/13	81	35.3	30.3	38.6
			4/30	59	28.2	29.6	35.4
Nelson	19-Can	3050	5/1	20	8.1	2.4	7.2*
Schweitzer Bowl	16A06	4500	4/27	46	21.3	17.8	26.8
Schweitzer Ridge	16A05	6100	4/27	90	37.1	51.2	47.5
Smith Creek	16A01	4800	5/1	66	31.4	36.8	47.4
Winchester Creek	17A03	2970	4/27	2.8	1.0	0.7	1.9

KETTLE RIVER

Barnes Creek	90-Can	5300	4/27	51	18.5	21.4	21.2*
Big White Mtn.	154-Can	5500	5/2	46	17.2	21.7	21.7*
Bluejoint Mtn.	244-Can	7500	4/27	61	22.6	31.4	32.2*
Boulder Road	18A02	1450	4/30	0	0.0	0.0	0.0
Butte Creek	18A03	4070	4/30	11	4.0	6.0	6.0
Cabin Creek	18A08	3170	4/30	0	0.0	0.8	1.8
Carmi	126-Can	4100	5/2	0	0.0	1.4	2.0*
Farron # 1	17-Can	4000	4/30	13	5.2	9.0	8.5*
Farron # 2	243-Can	4000	4/30	18	6.9	10.2	9.7*
Goat Creek	18A04	3595	4/30	0	0.0	0.0	0.0
Graystoke Lake	5-Can	5950	4/30	43	15.6	16.9	22.7*
Monashee Pass	48A-Can	4500	4/27	35	11.7	13.1	13.3*
Old Glory Mountain	42-Can	7000	4/29	55	20.4	-	29.8*
Snow Caps Creek	18A05	2150	4/30	0	0.0	0.0	0.0
Snow Caps Trail	18A06	2720	4/30	0	0.0	0.0	0.0
Summit G.S.	18A07	4600	4/30	6	2.1	5.6	6.3
Trapping Creek Upper	165-Can	4450	5/2	13	4.6	4.8	6.4*

Average based on 1963-77 average

* Average for years of record

SNOW DATA TO MAY 1, 1979 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

SPOKANE RIVER

Above Burke	15B08	6100	4/30	39	18.5	13.4	19.7
Copper Ridge	16B02	4800	4/27	50	23.5	9.2	25.7
Forty-nine Meadows	15B03	5000	4/27	57	22.6	12.8	26.9
Fourth of July Summit	16B03	3100	4/27	0	0.0	0.0	0.8
Granite Peak	15B13A	6000	4/27	105	38.1	33.0	47.6
Lookout	15B02	5250	4/13	81	35.3	30.3	38.6
			4/30	59	28.2	29.6	35.4
Lost Lake	15B14A	6000	4/27	127	47.4	44.8	62.5
Lower Sands Creek	16B01	3400	4/27	47	18.3	9.7	18.3
Sherwin	16C01	3200	4/30	16	7.0	0	7.2

OKANOGAN RIVER

Aberdeen Lake	6A-Can	4300	5/2	1.2	0.4	0.8	1.8*
Blackwall Mountain	100-Can	6250	5/1	54	22.8	33.9	38.1*
Bouleau Lake	234-Can	4580	4/28	40	9.9	13.1	12.5*
Brenda Mine	193-Can	4800	4/27	28	8.5	11.7	10.6*
Brookmere	27-Can	3200	4/27	11	2.8	4.2	5.8*
Enderby	130-Can	6250	4/27	81	30.0	46.0	43.6*
Esperon Creek Lower	164-Can	4400	4/28	16	5.3	8.5	10.4*
Esperon Creek Middle	163-Can	4700	4/28	26	9.1	12.6	13.7*
Esperon Creek Upper	162-Can	5400	4/28	39	12.7	18.4	20.2*
Graystoke Lake	5-Can	5950	4/30	43	15.6	16.9	22.7*
Hamilton Hill	107-Can	4900	4/26	28	10.2	16.6	13.3*
Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Isintok Lake	152-Can	5510	4/29	14	3.5	9.1	7.6*
Lost Horse Mountain	105-Can	6300	5/1	27	8.1	10.4	10.9*
Loup Loup	19A07	4650	4/27	0	0.0	6.4	6.1
McCulloch	4-Can	4200	4/29	3.1	0.7	0.5	2.8*
Missezula Mountain	106-Can	5100	4/25	20	5.5	11.4	5.8*
Mission Creek	5A-Can	6000	4/30	48	17.2	23.5	22.0*
Monashee Pass	48A-Can	4500	4/27	35	11.7	13.1	13.3*
Mount Kobau	156-Can	5950	4/30	17	5.0	16.8	14.2*
Mutton Creek No. 1	19A01	5700	4/30	1.1	0.4	15.7	11.3
Mutton Creek No. 2SP	19A11	6000	4/30		2.8	22.2	13.9
New Copper Mountain	46A-Can	4300	4/27	0	0.0	0.0	1.5*
New Penticton Res. #2	183-Can	5225	4/30	17	4.8	9.0	9.4*
Nickel Plate Mtn.	47-Can	6200	4/29	17	6.5	13.2	8.2*
Oyama Lake	203-Can	4400	4/29	7	2.0	3.3	3.8*
Postill Lake	55-Can	4500	4/30	16	4.5	5.2	6.9*
Quartette Lake	34-Can	4000	4/27	28	9.1	9.1	11.1*
Rusty Creek	19A03	4000	4/30	0	0.0	0.7	0.8
Salmon Meadows	19A02	4500	4/30	0	0.0	6.6	5.6

Average based on 1963-77 average

* Average for years of record

SNOW DATA TO MAY 1, 1979 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average #

OKANOGAN RIVER (Cont.)

Silver Star Mountain	99-Can	6050	4/29	54	21.0	36.3	28.6*
Summerland Reservoir	3A-Can	4200	4/28	19	4.7	6.7	6.9*
Touts Coulee	19A06	2845	4/27	0	0.0	-	-
Trout Creek	3-Can	4700	4/28	15	3.8	5.7	5.3*
Vaseux Creek	233-Can	4600	4/30	2	0.3	3.6	2.9*
White Rocks Mountain	70-Can	6000	4/26	52	19.4	26.5	27.7*

METHOW RIVER

Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Loup Loup	19A07	4650	4/27	0	0.0	6.4	6.1
Mutton Creek No. 1	19A01	5700	4/30	1.1	0.4	15.7	11.3
Mutton Creek No. 2 SP	19A11	6000	4/30		2.8	22.2	13.9
Rusty Creek	19A03	4000	4/30	0	0.0	0.7	0.8
Salmon Meadows	19A02	4500	4/30	0	0.0	6.6	5.6

CHELAN LAKE BASIN

Rainy Pass	20A09	4780	4/28	76	29.4	46.8	47.5
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ENTIAT RIVER

Blue Creek G.S.	20B28a	5425	4/30	50	21.0	42.8	39.9
Brief	20B19	1600	4/28	0	0.0	0.0	0.0
Entiat Meadows +	20A33a	4540	4/30	Not Measured		36.7	35.7
Entiat River Trail +	20A34a	3325	4/30	0	0.0	11.3	3.0
Four Mile Ridge +	20B27a	6800	4/30	48	20.2	47.9	38.5
Fox Camp +	20A36a	6510	4/30	92	38.6	78.5	64.1
Pope Ridge	20B20	3540	4/27	14	5.7	10.2	9.8
Pugh Ridge +	20A32a	6725	4/30	56	23.5	44.4	30.8
Shady Pass	20A37	6200	4/27	40	16.7	38.2	31.6
Snow Brushy +	20A35a	3910	4/30	64	26.2	32.4	29.4
Tommy Creek +	20B21a	4900	4/30	22	9.2	26.5	21.7

WENATCHEE RIVER

Berne Mill Creek	21B23	2925	4/26	51	23.1	17.9	23.9
Berne-Mill Creek New SP	21B41	3240	4/26	35	15.4	7.0	19.8
Blewett Pass No. 2	20B02	4270	4/16	30	12.1	9.2	15.3
			4/26	21	9.4	6.8	10.8
Chiwaukum G.S.	20B16	1810	4/26	1.6	0.3	0.0	1.5
Fish Lake	21B04	3371	4/26	45	21.2	-	28.0
Lake Wenatchee	20B05	1970	4/26	7.9	3.7	1.1	2.7

Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MAY 1, 1979 - APPENDIX 4

SNOW

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average $\frac{1}{2}$
<u>WENATCHEE RIVER (cont.)</u>							
Leavenworth R.S.	20B17	1127	4/25	0	0.0	0.0	0.0
Merritt	20B18	2140	4/26	17	6.6	0.0	5.5
Stevens Pass	21B01	4070	4/13	110	46.1	43.3	56.3
			4/26	93	43.0	45.5	57.5
Stevens Pass Sand Shed	21B45	3700	4/13	79	32.4	28.7	38.0
			4/26	64	29.6	25.2	37.3
<u>SQUILCHUCK CREEK</u>							
Beehive Springs	20B03	4400	4/27	3.5	1.3	1.5	2.2
Scout-A-Vista	20B04	3400	4/27	0	0.0	0.0	0.3
<u>STEMILT CREEK</u>							
Jump-Off	20B08	4450	4/26	7.2	3.0	5.2	3.3
Stemilt Slide	20B06	5000	4/26	16	6.3	7.4	7.8
Upper Wheeler	20B07	4400	4/26	0	0.0	0.0	1.3
<u>COLOCKUM CREEK</u>							
Colockum Creek Upper	20B22	5300	4/27	14	5.4	10.0	10.8
Colockum Creek Lower	20B23	4300	4/27	6.8	2.2	1.5	2.8
Trough # 2 SP	20B25	5310	4/27	20	7.5	15.0	New
<u>YAKIMA RIVER</u>							
Big Boulder Creek	21B09	3200	4/26	15	5.6	0.0	10.9
Blewett Pass No. 2	20B02	4270	4/16	30	12.1	9.2	15.3
			4/26	21	9.4	6.8	10.8
Bumping Lake	21C08	3450	4/11	25	10.4	6.0	13.8
			4/30	6.8	3.1	3.1	10.2
Bumping Lake New	21C36	3400	4/11	32	13.8	9.1	19.6
			4/30	16	6.8	6.9	15.2
Cayuse Pass	21C06	5300		Not Measured		70.9	98.1
Corral Pass	21B13	6000	4/26	80	36.8	33.5	42.6
Fish Lake	21B04	3371	4/26	45	21.2	-	28.0
Joe Lake +	21B46a	4624	4/23	153	70.4	62.4	67.0
Lake Cle Elum	21B14M	2200	4/10	0	0.0	-	2.7
Lemah Creek +	21B47a	3327	4/23	78	35.9	5.8	40.3
Morse Lake	21C17	5400	4/27	96	48.9	51.2	61.9
Olallie Meadows	21B02	3625	4/26	90	44.0	20.9	53.4
Stampede Pass SP	21B10	3860	4/16	-	46.4	28.4	42.9
			5/1	-	39.7	25.2	43.4

Average based on 1963-77 average

+ Snow water equivalent estimated from aerial stadia observation.

SNOW DATA TO MAY 1, 1979 - APPENDIX 5

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

YAKIMA RIVER (Cont.)

Tunnel Avenue	21B08	2450	4/11	44	17.6	7.3	23.9
			4/27	28	11.8	0.0	17.5
Van Epps Pass +	20B26a	5925	4/23	95	43.7	47.0	56.1
Waptus Lake +	21B49a	3024	4/23	60	27.6	15.8	38.9
White Pass (E. Side)	21C28	4500	4/12	56	22.5	16.9	26.9
			4/26	55	22.3	16.5	27.6

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C04	5700	4/23	65	26.7	16.1	24.8
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MILL CREEK

Tollgate	18D3M	5070	4/27	60	30.4	11.2	20.1
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COWLITZ RIVER

Cayuse Pass	21C06	5300		Not Measured		70.9	98.1
White Pass (E. Side)	21C28	4500	4/12	56	22.5	16.9	26.9
			4/26	55	22.3	16.5	27.6

PUGET SOUND DRAINAGEWHITE RIVER

Corral Pass	21B13	6000	4/26	80	36.8	33.5	42.6
Morse Lake	21C17	5400	4/27	96	48.9	51.2	61.9

GREEN RIVER

Cougar Mountain SP	21B42	3200	4/26	30	14.2	0.0	20.7
Snowshoe Butte SP	21B43	5000	4/26	122	58.2	40.2	67.7
Stampede Pass SP	21B10	3860	4/15	-	46.4	28.4	42.9
			5/1	-	39.7	25.2	43.4

SNOQUALMIE RIVER

Olallie Meadows	21B02	3625	4/26	90	44.0	20.9	53.4
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SKYKOMISH RIVER

Stevens Pass	21B01	4070	4/13	110	46.1	43.3	56.3
			4/26	93	43.0	45.5	57.5
Stevens Pass Sand Shed	21B45	3700	4/13	79	32.4	28.7	28.0
			4/26	64	29.6	25.2	37.3

Average based on 1963-77 average
+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MAY 1, 1979 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

SKAGIT RIVER

Beaver Creek Trail	21A04	2200	4/28	2.6	1.1	0.0	7.3
Beaver Pass	21A01	3680	4/27	45	21.4	17.2	34.5
Brown Top Ridge +	21A28a	6000	4/27	101	43.4	50.9	74.7
Devils Park	20A04	5900	4/27	83	33.8	45.4	50.4
Freezeout Creek Trail	20A01	3500	4/27	18	6.3	1.7	10.2
Freezeout Meadows New	20A38	5000	4/27	80	37.2	24.5	40.3
Granite Creek	21A29A	3500	4/28	24	9.6	5.1	18.2
Harts Pass	20A05A	6500	4/27	84	33.1	56.1	51.5
Klesilkwa	35B-Can	3700	4/25	17	6.4	0.0	8.5*
Meadow Cabins	20A08	1900	4/28	5	2.5	0.0	1.9
New Hozomeen Lake	21A30	2800	4/27	12	4.2	0.0	10.5
New Tashme	26A-Can	2500	4/30	0	0.0	0.0	4.1*
Quartette Lake	34-Can	4000	4/27	28	9.1	9.1	11.1*
Rainy Pass	20A09	4780	4/28	76	29.4	46.8	45.7
Thunder Basin	20A07	4200	4/28	52	19.6	18.9	26.2

BAKER RIVER

Dock Butte	21A11A	3800	4/30	118	53.0	46.7	79.3
Easy Pass	21A07A	5200	4/30	120	54.0	85.8	97.6
Jasper Pass	21A06A	5400	4/30	142	64.0	79.8	99.8
Marten Lake	21A09A	3600	4/30	138	62.0	52.8	87.0
Mount Blum +	21A18a	5800	4/30	112	50.0	69.6	76.1
Panorama New	21A26	4300	4/16	127	60.2	52.2	79.6
			4/29	106	58.0	44.3	88.3
Rocky Creek	21A12A	2100	4/30	25	12.0	0.0	28.4
Schreibers Meadow	21A10A	3400	4/30	80	38.0	37.0	70.5
S. F. Thunder Creek	21A14A	2200	4/30	0	0.0	0.0	2.0
Watson Lakes	21A08A	4500	4/30	136	61.0	50.8	77.7

NOOKSACK RIVER

Glacier Creek	21A23	3700	4/29	47	21.6	-	27.1
Panorama New	21A26	4300	4/16	217	60.2	52.2	79.6
			4/29	106	58.0	44.3	88.3

O L Y M P I C P E N I N S U L ADUNGENESS RIVER

Deer Park	23B04	5200	4/26	41	21.9	12.2	24.2
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MORSE CREEK

Cox Valley	23B14	4500	4/27	78	35.5	30.5	45.3
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ELWHA RIVER

Hurricane	23B03	4500	4/29	42	16.1	13.2	28.2
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Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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SOIL CONSERVATION SERVICE

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